



**INDIUM CORPORATION OF AMERICA®\EUROPE®\ASIA-PACIFIC®
INDIUM CORPORATION (SUZHOU)®
SAFETY DATA SHEET**

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH NC-10HF FLUX COATING

MSDS Number: MSDS- 5352

Revised Date: 15 APRIL 2013

Product Use: INDUSTRIAL USE - FLUX COATED PREFORM

MANUFACTURER:

In America:

The Indium Corporation of America
1676 Lincoln Ave., Utica NY 13502
Information: (315) 853-4900
nswarts@indium.com

EMERGENCY PHONE:

CHEMTREC 24 hrs.
USA: 1 (800) 424-9300
Outside USA: +1 (703) 527-3887

In Europe:

Indium Corporation of Europe
7 Newmarket Ct.
Kingston, Milton Keynes, UK, MK 10 OAG
Information: +44 [0] 1908 580400

In China:

Indium Corporation (Suzhou) Co., Ltd.
No. 428 Xinglong Street
Suzhou Industrial Park
Suchun Industrial Square
Unit No. 14-C
Jiangsu Province, China 215126
Information: 86-512-6283-4900

In Asia:

Asia-Pacific Operations-Singapore
29 Kian Teck Avenue
Singapore 628908
Information: +65 6268-8678

2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

Eye Inhalation Skin Ingestion NTP

Carcinogen listed in

IARC OSHA Not Listed



(lead containing product)

GHS:

Signal Word: Warning

Hazard statement(s)

H302 Harmful if swallowed
 H317 May cause an allergic skin reaction
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 H335 May cause respiratory irritation
 H332 Harmful if inhaled
 H351 Suspected of causing cancer (lead)
 H360 May damage fertility or the unborn child (applicable to lead containing product)
 H373 May cause damage to organs through prolonged or repeated exposure (applicable to lead containing product)
 H400+H413 Very toxic to aquatic life, may cause long lasting harmful effects to aquatic life (lead)
 EUH201A Warning! Contains lead (applicable only to the products listed that contain lead) Review listing.
 EUH208 Contains rosin. May produce an allergic reaction

Precautionary statement(s)

P233 Keep container tightly closed
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray
 P270 Do not eat, drink or smoke when using this product
 P273 Avoid release to the environment
 P280 Wear protective gloves/protective clothing/eye protection/face protection
 P362 Take off contaminated clothing and wash before reuse
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water
 P304 + 341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
 P305 + 351 IF IN EYES: Rinse continuously with water for several minutes (15 mins)

POTENTIAL HEALTH EFFECTS:

Product may contain lead. Review product table.

Eye Contact: Irritating to the eyes and if not removed promptly. Molten metal may cause burns to the eyes.

Ingestion: May cause irritation. May be harmful if swallowed.

Inhalation: Heated vapor concentrations may be harmful if inhaled. Irritating to the respiratory tract. Rosin may cause occupational asthma.

Skin Contact: May cause skin irritation or dermatitis. Molten metal may cause burns to the skin.

Chronic: **LEAD:** Prolonged exposure to vapors or fumes at higher temperatures may cause respiratory

irritation and systematic lead poisoning. Symptoms of lead poisoning include headache, nausea, abdominal pain, muscle and joint pain and damage to the nervous system, blood system and kidneys.

SILVER: Chronic skin contact or ingestion of silver dust, salts, or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes.

TIN: Has been shown to increase incidence of sarcoma in animal tests.

COPPER: Overexposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever; dry throat, cough, weakness, lassitude); metallic or sweet taste; discoloration of skin and hair.

NOTE: The Indium Corporation does not recommend, manufacture, market or endorse any of its products for human consumption.

Warning: Applicable in the State of California: This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (lead)

Warning: This product may contain lead. Lead may be harmful to your health. US Federal law prohibits the use of leaded solders in making joints or fittings in any private or public water supply system. Keep out of the reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt	CAS Registry #	PEL mg/m ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
ROSIN FLUX MIXTURE	0.1 - 4	65997-05-9 (EU)	N.E. 0.05	N.E. -	N.E. 0.15
TIN	*	7440-31-5/231-141-8 (US) (EU) (Canada) (Singapore)	2 - - 2	2 2 2 -	- 4 4 -
LEAD	*	7439-92-1/231-100-4 (US) (EU) (Canada) (Singapore) (Mexico)	0.05 - 0.05 0.15 N.E.	0.05 0.15 0.05 - 0.15	- - - - -

		(China)	-	0.05(dust)	-
				0.03(fume)	-
SILVER	*	7440-22-4/231-131-3			
		(US)	0.01	0.1	-
		(EU)	-	0.1	-
		(Canada)	-	0.1	0.3
		(Mexico)	-	0.1	-
		(Singapore)	0.1	-	-
COPPER	*	7440-50-8/231-159-6			
		(US)	0.1	0.2	-
		(EU)	-	0.2 (fume)	2(dust)
		(Canada)	-	0.2	0.6
		(Singapore)	0.2(fume)	1(dust)	-
		(Mexico)	0.2	-	2
		(China)	-	0.2(fume)	0.6(fume)
BISMUTH	*	7440-69-9/231-177-4	N.E.	N.E.	N.E.

DOES NOT CONTAIN ANY LISTED EU REACH SUBSTANCES OF VERY HIGH CONCERN (SVHC)

N.E. = Not established * Refer to the Alloy Table

TLV= time weighted average

STEL= short term exposure level

PEL= permissible exposure level

ALLOY TABLE

Metal mixed with flux coating (0.1-4%)

INDALLOY (Metal mix)	%LEAD Pb	%TIN Sn	%SILVER Ag	% BISMUTH Bi	%COPPER Cu	Specific Gravity	RoHS Compliance+
97 (43Sn/43Pb/14Bi)	41.3-42.6	41.3-42.6	-	13.4-13.9	-	9.02	No
104 (Sn62/Pb36/Ag2)	34.6-35.9	59.5-61.9	1.92-1.99	-	-	8.41	No
241 (SAC387) (95.5Sn/3.8Ag/0.7Cu)	-	91.7- 95.4	3.6 - 3.79	-	0.67- 0.69	7.40	Yes
244 (99.3Sn/0.7Cu)	-	95.3 – 99.2	-	-	0.67 - 0.69	7.31	Yes
256 (SAC305) (96.5Sn/3Ag/0.5Cu)	-	92.6-96.4	2.88-2.99	-	0.48-0.499	7.40	Yes
282 (57Bi/42Sn/1Ag)	-	40-41.6	0.96-0.99	54.7-56.4	-	8.57	Yes
NON STANDARD (96.3Sn/3.7Ag)	-	92.4 - 96.2	3.55 - 3.69	-	-	7.36	Yes

Non Standard = non-standard alloy mixture

+Review any exemptions that may apply.

4. FIRST AID MEASURES

- Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.
- Ingestion:** If patient is conscious, ONLY induce vomiting as directed by trained personnel. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.
- Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.
- Skin Contact:** Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

5. FIRE FIGHTING MEASURES

- Flash Point:** Not applicable **Method:** Not available.
- Auto-ignition Temperature:** Not established. Not flammable.
- Flammable Limits:** Limits not established.
- Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions. CO₂, foam, water.
- Special Fire Fighting Procedures:** Firefighters must wear NIOSH approved or equivalent self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

- Spill or Leak Procedures:** Wear a respirator and appropriate personal protective equipment (See Exposure Controls/Personal Protective Section). Let molten metal cool before picking up. Molten

metal may have reclaim value.

Dispose of following all Federal, State and Local regulations.
Ensure area is ventilated. Dusty areas require respiratory protection. Do not sweep areas that may generate lead containing dusts.

7. HANDLING AND STORAGE

Handling Precautions: Keep containers tightly closed when not in use. Use care to avoid spills. Avoid breathing vapors from heated material. Avoid contact with eyes, skin and clothing. Use with adequate ventilation.

Storage Precautions: Store product in tightly capped original containers in a cool, dry area. Keep away from heat and flame. Store away from incompatible materials. Dispose of empty containers properly.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Exhaust or point source ventilation should be sufficient to control airborne levels and keep exposure levels low. Always ventilate equipment that holds molten metal. Avoid exposure to lead containing fumes, if applicable.

Personal protection:

Eyes: Chemical safety glasses/goggles. Face shield for molten metal.

Respirator: An approved or compliant marked air-purifying respirator with a HEPA/particulate cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated or when proper ventilation is not adequate to protect the worker.

Skin: Compatible chemical resistant gloves is recommended. Recommend protective outer garment, apron and sleeves as appropriate. Avoid skin exposure.

Other: Eyewash fountain in work area. Avoid the use of contact lenses in high fume/dusty areas.

Work/Hygienic Practices: Maintain good housekeeping. Clean up spills immediately. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area. Follow standard lead worker requirements when applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid metal with flux coating	Boiling Point:	Not applicable.
Odor:	Slight characteristic odor.	Melting Point:	Not applicable
Specific Gravity:	See table	pH:	Not applicable
Vapor Pressure:	Not applicable.	Solubility in Water:	Not established
Vapor Density:	(air=1) Not applicable.		

10. STABILITY AND REACTIVITY

General: Stable.

Conditions to Avoid: Not established

Incompatible Materials: Not established

Hazardous Decomposition / carbon monoxide, carbon dioxide

Combustion:

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: NTP: No

OSHA: No

IARC: Yes Lead and lead compounds are listed as possible carcinogens.

Chronic Toxicity: Prolonged or repeated exposure to rosin flux fume may cause workers to develop occupational asthma. Lead can cause potential harm to the developing fetus.

12. ECOLOGICAL INFORMATION

Product not tested.

13. DISPOSAL CONSIDERATION

Waste Disposal Method: Dispose of in accordance with all Federal, State and Local environmental regulations. In Europe follow the Special Waste Regulations. Product may have reclaim scrap value.

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements. Not regulated under US DOT (United States Department of Transportation). Not hazardous under the shipping regulations.

North American Emergency Guide Book – Not classified

UN - none

15. REGULATORY INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated hereunder (29 CFR 1910.1200 ET. SEQ.).

This product has been classified in accordance with the hazard criteria of the Mexican regulations: NOM-018-STPS-2000 and NOM-010-STPS-1999.

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).

Canadian WHMIS:



D2B Materials Causing Other Toxic Effects -irritant
D2A-Materials Causing Other Toxic Effects-Very Toxic Material (Chronic) (lead).

This product has been classified in accordance with the guidelines set by the Dept of Industrial Health of the Republic of Singapore.

SARA 313 Listing - 40 CFR 372.65 - lead, tin, silver

All ingredients are listed on the EPA TSCA Inventory.

EC Classification, Packaging and Labeling Requirements:

Symbol and Hazard Classification of Product

Xn

Risk Phrases:

R20/22	Harmful by inhalation, and if swallowed (lead)
R42/43	May cause sensitization by inhalation and skin
R36/37/38	Irritating to eyes, respiratory system and skin
R33	Danger of cumulative effects (lead)
R40	Limited evidence of carcinogenic effect (lead)
R48	Danger of serious damage to health by prolonged exposure (lead)
R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment (lead)
R61	May cause harm to the unborn child (lead)

Safety Phrases:

S20/21	When using do not eat, drink or smoke
S23	Do not breathe fumes/gas/vapor/spray
S24/25	Avoid contact with skin and eyes
S28	After contact with skin wash immediately with plenty of soap and water
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection

16. OTHER INFORMATION

HMIS Hazard Rating:	Health:	2
	Fire:	0
	Physical Hazard:	0

Revised Date: 15 APRIL 2013

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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